# UNITED STATES PATENT AND TRADEMARK OFFICE **CERTIFICATE OF CORRECTION**

PATENT NO.

: 7,436,492 B2

Page 1 of 3

APPLICATION NO.: 10/599530

DATED

: October 14, 2008

INVENTOR(S)

: Braunecker et al.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

# Title Page

Item (75) Inventors, change "Berneck" to -- Marbach--ABSTRACT, change "on to a target" to --onto a target-- (line 4) Delete Title Page and substitute the Attached Title Page therefor

# **Drawings**

Sheet 2, (replace Figure 3)

Delete sheet 2 and replace with attached sheet 2.

## Column 1

Line 26, change "air-or" to --air- or--

# Column 2

Line 6, change "on to" to --onto--

Line 49, change "component" to --components--

Line 56, change "of transmitter" to --of the transmitter--

Line 65, change "achieved, according" to --achieved, or the achievements are further developed, according--

Lines 66-67, change "Claims or the achievements are further developed." to --Claims.--

### Column 4

Line 62, change "FIG. 3" to --FIG. 4--

Signed and Sealed this

Thirteenth Day of January, 2009

JON W. DUDAS Director of the United States Patent and Trademark Office

# (12) United States Patent

Braunecker et al.

(10) Patent No.: US 7,436,492 B2 (45) Date of Patent: Oct. 14, 2008

(54)	ELECTRONIC DISTANCE METER
	PEATURING SPECTRAL AND SPATIAL
	SELECTIVITY

- (75) Inventors: Bernhard Braunecker, Rebstein (CH); Peter Kipfer, Bemeck (CH)
- (73) Assignee: Lelca Geosystems AG, Heerbrugg (CH)
  (\*) Notice: Subject to any disclaimer, the term of this

patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.:

10/599,530

(22) PCT Filed:

Apr. 1, 2005

(86) PCT No.:

PCT/EP2005/051478

§ 371 (c)(1), (2), (4) Date:

e: Dec. 30, 2006

(97) DOT DOL NA

(87) PCT Pub. No.: WO2005/096009

PCT Pub. Date: Oct. 13, 2005

(65) Prior Pr

**Prior Publication Data** 

US 2007/0188735 AI Aug. 16, 2007

#### Related U.S. Application Data

- (60) Provisional application No. 60/558,580, filed on Apr. 2, 2004.
- (51) Int. CL

G01C 3/08 (2006.01)

#### (56) References Cited

#### U.S. PATENT DOCUMENTS

4.450,460 A	•	5/1984	Monmoto	*********	250/338.1	

4,611,912	۸ ٠	9/1986	Falk et al
5,633,706	A *	5/1997	Cho et al
5,963,996	A *	5/1999	Morley 42/115
6,111,692	A *	8/2000	Sauter
6,181,412	BI*	1/2001	Popescu et al 356/4.09
2003/0067645	AI*	4/2003	Ibsen et al
2004/0130702	AI*	7/2004	Jupp et al 356/5.01
2004/0213527	AI*	10/2004	Martinsson
2004/0246495	AI*	12/2004	Abe

#### FOREIGN PATENT DOCUMENTS

DE

102 00 632 A 7/2003 2844603 A 3/2004

#### OTHER PUBLICATIONS

Noriaki Nishi, Takahira Jiisuno; Masahiro Nakatsuka and Sadao Nakai, "Improvement of Laser-Beam Irnafintion-Intensity Distribution Using Multi Lens Array and Edge-Shaped Plates", [Optical Review vol. 5, No. 5 (1998) 285-290].\*

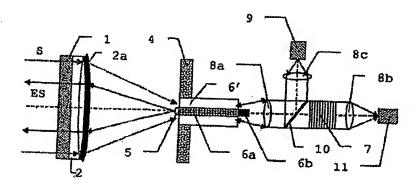
#### (Continued)

Primary Examiner—Thomas H. Tarcza
Assistant Examiner—Timothy A Brainard
(74) Attorney, Agent, or Firm—Workman Nydegger

### (57) ABSTRACT

Disclosed is a distance meter, particularly for telescope arrays in ground-based or space-based applications for detecting surfaces. Said distance meter comprises at least one radiation source for emitting electromagnetic radiation on to a target that is to be measured, a receiver unit with a sensor for receiving the radiation reflected by the target and deriving distance data, and a first spectral filter component. According to the invention, the angular spread of reception of the reflected radiation is limited by means of at least one spatial filter component, especially a fiber taser as a radiation source and receiver component.

### 18 Claims, 2 Drawing Sheets



U.S. Patent

Oct. 14, 2008

Sheet 2 of 2

7,436,492 B2\*

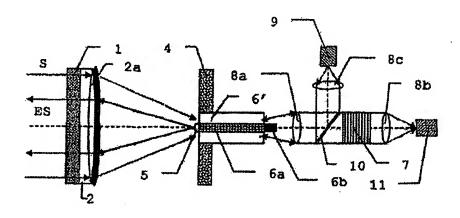


Fig. 3

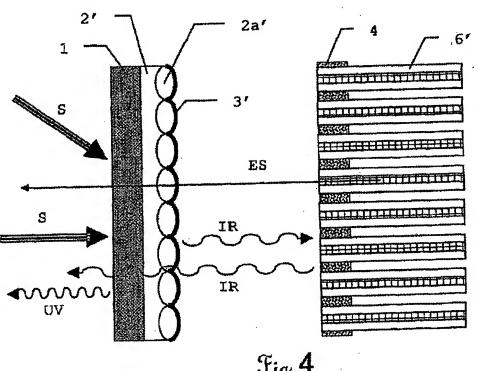


Fig. 4